Non-CO_2 Greenhouse Gases: Methane

Source/Sectors: Agriculture/Enteric Fermentation

Technology: Improvements to animal husbandry/livestock reduction (A.3.1.1)

Description of the Technology:
Livestock numbers are the major determinant of methane emission from pastoral agriculture, and it is implicit that reducing numbers is the simplest way to reduce emission. Improvements to animal husbandry focus on reducing methane emissions per unit product (meat, milk, wool, etc.) rather than emissions per animal as the most cost-effective means of reducing overall methane production. Hence, it aims to reduce the herd size while sustaining the same output. Together with supplementation to improve efficiency of feed utilization and increase product output, this may reduce methane production per unit of milk or meat by a factor of 4-6. Provided animal numbers decrease, as demand is met, the production of methane from the large populations of animals fed poor-quality forages could be reduced to below 50%, and perhaps even to as low as 25% of its present rate.

Effectiveness: Good

Implementability: This option is especially effective in developing countries, which account for more than half ruminant numbers; also in semi-arid regions of developed countries where reproductive performance and meat and dairy productivity are limited by food quality (Leng, 1991).

Reliability: One of the basic options to reduce emissions from this sector.

Maturity: Fair

Environmental Benefits: Methane emission reduction

Cost Effectiveness: This can be a cost effective option since the cost of feed would decrease according to the decrease in animal size (US Climate Change, 2005).

Industry Acceptance Level:

Limitations: Reduction of livestock will obviously have implications for farm profitability and for the size of the agricultural sector; it may also reduce the supply of farm product such as meat and milk (Bates, 2001). This is not an acceptable solution as a stand-alone option; however, it may be possible to reduce methane emissions by combining with improvements in animal efficiency with lower livestock numbers (O'Hara *et al.*, 2003). Some countries are heavily dependent on their livestock industries for generating national income, and the imposition of regulations aimed at reducing livestock numbers would not be well received by the farming industry (US Climate Change, 2005).

Sources of the information:

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